that the individual annual values are subject to very large fluctuations of much shorter intervals than the sun-spot period. These shorter fluctuations are of such violence that they have a very large immediate effect upon the crops of the corresponding year.

Turning now to the group of three stations in Saskatchewan, we find minima in 1890, 1895, 1905, 1914, 1919 and 1931. These give intervals of 5, 10, 9, 5 and 12 years. It must be admitted, however, that major minima are more difficult to recognize than in Alberta. From 1895 to 1919 is approximately twice the sun-spot period and that from 1919 to 1931 is very close to a sun-spot interval. Looking at the maxima we find them in 1892, 1901, 1916, 1921 and 1927. All three stations do not come to a major maximum in the same year, so that the actual intervals between peaks are somewhat doubtful. On the whole the case for solar influence in Saskatchewan is rather weak.

The last group of three consists of Qu'Appelle in southeastern Saskatchewan and two stations in Manitoba. At these three stations the smooth curves on the whole do not show such large fluctuations. The maxima are in about 1891, 1901, 1923, with somewhat doubtful peaks about 1912 and 1927. It is possible to pick the peaks so as to get intervals approximating those of the sun-spot intervals but the result is not very satisfactory. There are minima about 1889, 1900, 1910, 1920 and 1930, so that if we neglect the fairly well marked minima about 1894 and 1926 we have a rather better case for solar influence.

Since visual examination of the curves is rather unsatisfactory the figures were subjected to a statistical analysis. That for Q and the sun-spot numbers is given in Table 11. Qw was treated in the same way. The averages of both Q and Qw for each year of the sun-spot cycle are plotted on the diagram. The period was taken as 12 years (since the actual time, although variable, is greater than 11 years). The height of the curve at both ends (corresponding to sun-spot minima) is therefore not identical.

Four sun-spot maxima have occurred during the time for which we have data. The data, thus analyzed, indicate that the weather in the Canadian West from the farmers' standpoint may be expected to reach a peak of beneficence about sun-spot minimum; to fall sharply in the two succeeding years; then rise to a secondary peak one year before the sun-spot maximum; fall steeply at maximum sun spots and the following year; thereafter to rise slowly to a peak at the next sun-spot minimum.

A few figures of district yields of wheat are plotted on the diagrams. Enough evidence to show that weighting the weather data of one year by those of the two preceding years is not generally good practice is seen by the comparative failure of the wheat yields at Edmonton and Qu'Appelle to parallel the weighted weather figures. The parallelism for Swift Current is, however, surprisingly good. In fact, although there is a very good positive correlation in the West between annual rainfall and wheat yields and a good negative one between summer temperature and yields, yet the annual figures got by combining temperature and rainfall are far from exactly paralleling the yield figures. Undoubtedly the distribution of heat and moisture throughout the period of growth is a very important factor, of which we have taken no account in our tables or curves.

The relation of sun-spot numbers to wheat weather and to wheat yields is therefore of no value for predicting the yield of any particular year, but does appear to indicate an irregularly cycloidal march of these variables through the years.

Since we have given the annual values of both precipitation and summer temperature, there are sufficient data for those who wish to consider this matter further.